



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC02013-EB	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR2002/000627	International filing date (day/month/year) 09 APRIL 2002 (09.04.2002)	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC IPC7 C07D 311/10		
Applicant ELCOM BIOTECHNOLOGY, CO., LTD. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3. This report contains indications relating to the following items: <div style="margin-left: 20px;"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application </div>

Date of submission of the demand 28 OCTOBER 2003 (28.10.2003)	Date of completion of this report 10 AUGUST 2004 (10.08.2004)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer WON, Ho Joon Telephone No. 82-42-481-8293 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2002/000627

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet _____

5.

- ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1 - 4	YES
	Claims	5	NO
Inventive step (IS)	Claims	1 - 3	YES
	Claims	4, 5	NO
Industrial applicability (IA)	Claims	1 - 5	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: WO 2001/52841 A

D2: 'Coumarins Isolated from *Angelica gigas* Inhibit Acetylcholinesterase: Structure-Activity Relationships' Kang, S.Y et al. Journal of Natural Products(2001), 64(5), p683-685

1. Novelty

Claim 1 relates to pyranocoumarin derivatives of formula(1), claim 2 relates to an agent for enhancing cognition containing said derivatives, and claim 3 relates to the method of manufacturing said derivatives.

The present invention is different from D1 in the substituent of the compound, though D1 discloses an extract of *Angelicae gigantis Radix*, and also different from D2 in that D2 does not disclose the structure of the decursin compound but the effect of enhancing cognition. Accordingly, claims 1-3 are considered to be novel.

Claim 4 relates to an agent for enhancing cognition containing the decursin compound of formula(II) and claim 5 relates to Dong Quai extract containing said decursin compound. However, D1 also discloses Dong Quai extract containing the decursin compound. Therefore, claim 5 cannot be considered to be novel. Thus, the subject matter of claims 1-4 is novel, but claim 5 is not novel under PCT Article 33(2).

2. Inventive Step

Claim 5 is not novel, thus there is no need to consider its inventive step.

(Continued on Supplemental Sheet)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2002/000627

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V

Compared with D1, Claim 1 claims pyranocoumarin derivatives of chemical formula(1) and the definition of the substituent, R1 of the decursin compound is different from that of D1. In spite of the same chemical moiety of the compound as that of D1, the substituent, R1 containing Benzyl cannot be easily defined by a person skilled in the art with the substituent of D1. Thus, claim 1 involves an inventive step, and claims 2-3 dependent on claim 1 are also considered to involve an inventive step.

The use of the decursin compound of claim 4 as an agent for enhancing cognition is different from that of D1 as an analgesic agent. However, D2 discloses the effect of the decursin compound as an agent for enhancing cognition. Accordingly, the decursin compound extracted from Dong Quai of D1 can be easily considered to have the effect of enhancing cognition with the knowledge of D2, which is obvious to a person skilled in the art with the combination of D1 and D2. Thus, the subject-matter of claims 4 to 5 does not involve an inventive step in the sense of Article 33(3)PCT.

3. Industrial Applicability

Claims 1 to 5 meet the criteria set out PCT Article 33(4).